AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. Cancelled.

2. Cancelled.

3. Cancelled.

4. Cancelled.

5. Cancelled.

6. (Currently Amended). A method for displaying three-dimensional vector orientations on a two-dimensional surface comprising the following steps:

   a. establishing a sampling grid over an area of geological interest having properties capable of representation by Cartesian vectors;

   b. locating equally-spaced measuring stations for measuring said properties on said sampling grid, wherein said measuring stations are designated by ~~the~~ letters;

   c. creating a two-dimensional map of the sampling grid;

   d. obtaining field measurements of the properties at each of said measuring stations and recording the time at which said field measurements were taken; wherein the field measurements are represented in three dimensions as Cartesian coordinates X_a, Y_a and Z_a where "a" indicates the measuring station designation, and wherein said step of obtaining the field measurements occurs over a defined period of time;

e. correcting the field measurements for external conditions in order to obtain remnant values for each field measurement $X_{remnant}$, $Y_{remnant}$ and $Z_{remnant}$.

f. converting said Cartesian ~~coordinates~~ remnant values to mathematical spherical coordinates;

g. applying a color model to said mathematical spherical coordinates wherein said color model creates color hues that are representative of the magnitude and direction of said mathematical spherical coordinates at each of the measuring stations; ~~and;~~

h. applying said color model to said two-dimensional map thereby forming a pixilated representation of three-dimensional data in two-dimensional format wherein the pixilated presentation discloses interpretable data based on said color hues~~.~~; and, transferring said Cartesian remnant values to mathematical spherical coordinates r_{math}, $theta_{math}$ and phi_{math}.

7. (Cancelled).

8. (Cancelled).

9. (Cancelled).

10. (Cancelled).

11. (Cancelled).

12. (Cancelled).

13. (Cancelled).

14. (Cancelled).

15. (Cancelled).

16. (Cancelled).

17. (Currently Amended). The method of claim ~~16~~ 6 further comprising the step of translating said mathematical spherical coordinates to geological coordinates r_g, $theta_g$ and phi_g.

18. (Original). The method of claim 17 further comprising the step of applying a color notation model to each of said geological coordinates wherein said color notation has a direct symmetry to the geological coordinates and so that a unique color hue represents a specific value and direction of a three dimensional vector obtained at each of the measuring station, and further wherein said specific value and direction of the three dimensional vector representing a measuring station is shown as a colored pixel.

19. (Original). The method of claim 18 wherein said color notation model is selected from a group of color notation models comprising the following color notation models: RGB, CIE, HSV, HSL, CIE XYZ, YIQ, Munsell, TekHVC and CIE LUV.

20. (Original). The method of claim 19 wherein said unique color hue is overlaid on said two-dimensional map for each of the measuring stations thereby producing a pixilated two-dimensional map of three-dimensional magnetic field data.